

# ABSTRACT

Compounds and methods for sorbing organosulfur compounds from fluids are provided. Generally, compounds according to the present invention comprise mesoporous, nanocrystalline metal oxides. Preferred metal oxide compounds either exhibit soft Lewis acid properties or are  
5 impregnated with a material exhibiting soft Lewis acid properties. Methods according to the invention comprise contacting a fluid containing organosulfur contaminants with a mesoporous, nanocrystalline metal oxide. In a preferred embodiment, nanocrystalline metal oxide particles are formed into pellets (14) and placed inside a fuel filter housing (12) for removing organosulfur contaminants from a hydrocarbon fuel stream.